

# PATENT COOPERATION TREATY

PCT/EP2004/000471

From the INTERNATIONAL BUREAU

## PCT

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

BARTELS UND PARTNER  
Lange Strasse 51  
70174 Stuttgart  
ALLEMAGNE

Bartels und Partner  
Patentanwälte

Eingegangen: 09. MRZ. 2006  
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Date of mailing (day/month/year) 02 March 2006 (02.03.2006)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 40cdh/229187	
International application No. PCT/EP2004/000471	International filing date (day/month/year) 22 January 2004 (22.01.2004)
Applicant HYDAC TECHNOLOGY GMBH et al	

### 1. Transmittal of the translation to the applicant.

- ☐ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).
- ☒ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

### 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

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The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

### 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  Yolaine Cussac
Facsimile No.+41 22 740 14 35	Facsimile No.+41 22 338 70 80

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>40cdh/229187</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/000471</b>	International filing date (day/month/year) <b>22.01.2004</b>	Priority date (day/month/year) <b>11.03.2003</b>
International Patent Classification (IPC) or national classification and IPC		
Applicant <b>HYDAC TECHNOLOGY GMBH</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input checked="" type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/000471

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
  - ☐ publication of the international application (Rule 12.4)
  - ☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☐ the international application as originally filed/furnished
- ☒ the description:

pages 1-7 \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☒ the claims:

nos. 1-9 \_\_\_\_\_ as originally filed/furnished

nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☒ the drawings:

sheets 1/2-2/2 \_\_\_\_\_ as originally filed/furnished

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (specify): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (specify): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (specify): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	3-9	YES
	Claims	1, 2	NO
Inventive step (IS)	Claims		YES
	Claims	1-9	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

1 This report makes reference to the following documents:

D1: DE 34 11 367 A (BOSCH GMBH ROBERT)

10 October 1985 (1985-10-10)

D2: US-A-4 754 648 (BYRD AUDIS C ET AL)

5 July 1988 (1988-07-05)

D3: DE 39 10 691 A (TEVES GMBH ALFRED)

4 October 1990 (1990-10-04)

2 The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1 and 2 is not novel within the meaning of PCT Article 33(2).

2.1 Independent claim 1:

D1 discloses (the references in parentheses are to this document; cf. in particular page 5, lines 3-30, and figure 1):

Hydraulic accumulator having:

a) an accumulator housing (3) formed of non-

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

- magnetisable material, which defines an axial direction of the housing,
- b) a partition element (4) which is axially displaceable in the accumulator housing (3), said partition element separating two operating areas (18, 19) from each other in the accumulator housing (3),
  - c) a field-generating magnet arrangement (14, 15) arranged on the partition element (4) and
  - d) a series of magnetic field sensors (6-9) arranged on the outer face of the accumulator housing (3), said series of sensors extending along the path of the axial direction of the partition element (4) and responding to the field generated by the magnet arrangement (14, 15) on the partition element (4) in order to characterize the position thereof along the series of magnetic field sensors (6-9).

## 2.2 Claim 2:

D1 also discloses the features of claim 2 (see figure 1).

## 3 Dependent claims 3-9

Dependent claims 3-9 do not appear to contain any additional features which, in combination with the features of any claim to which they refer back, could lead to subject matter involving an inventive step. The reasons are:

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citations and explanations supporting such statement

## 3.1 Claim 3:

D1 also discloses a piston formed of non-magnetisable material (cf. page 5, lines 24-25). The further feature pertaining to the positioning of the permanent magnets on the piston does not substantiate inventive step. The position of the permanent magnets on the piston is determined by a person skilled in the art according to technical requirements: that is, in the case of a piston without location, the magnets must either be arranged on the circumference of the piston "at the same level" or, in the presence of only one permanent magnet on the circumference of the piston, the magnetic field sensors must be arranged externally in a distributed manner over the entire surface of the accumulator housing so as to "cover the surface". A person skilled in the art normally chooses the first alternative on the grounds of greater technical simplicity and reduced cost.

## 3.2 Claims 4 and 5:

The additional features of these claims are known per se from D2 (cf. column 5, lines 26-38, and figure 2).

## 3.3 Claim 6:

The additional feature of claim 6 is only one of several obvious possibilities (for example,

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citations and explanations supporting such statement

spring-loaded reset, gravitational reset or, if the gap between the magnetic field sensors is sufficiently small, magnetic force reset, as in D2) from which a person skilled in the art would choose according to the circumstances in order to solve the problem of interest, without thereby being inventive.

## 3.4 Claim 7:

The additional features of claim 7 are known or, at least, obvious. The structural design of the fastening of the permanent magnets to the piston is determined by a person skilled in the art according to the circumstances without inventive input. D3 (see column 5, lines 29-31) specifies that only non-magnetic material should be used in the area of the fastening. Further, it is evident to a person skilled in the art that the magnets should be orientated radially, since this is the only means of ensuring that the rod-shaped permanent magnets on the outer face of the accumulator housing occupy clear positions on passage by the piston.

## 3.5 Claim 8

The relative term "small distance" used in claim 8 has no generally recognized meaning and leaves the reader uncertain as to the meaning of the technical feature in question. As a result, the subject matter of said claim is not clearly

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defined (PCT Article 6). Further, it is generally known to those skilled in the art that indicator accuracy improves according to decreasing distance between the inner wall of the cylinder and the polar end surfaces.

## 3.6 Claim 9

Non-magnetisable materials are known. D3, for example, mentions plastic (see column 5, lines 3-4 and 25-31).

- 3.7 Since each of D1-D3 pertains to installations similar to the subject matter of the application, it would be obvious to a person skilled in the art to apply either the features known from the cited prior art or self-evident features (see 3.1-3.6 above) to like effect to a hydraulic accumulator as per D1. In this way he would arrive at a hydraulic accumulator as per each of claims 3-9 without thereby being inventive.



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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Contrary to PCT Rule 5.1(a)(ii), the description does not cite D1 and D2 or indicate the relevant prior art disclosed therein.